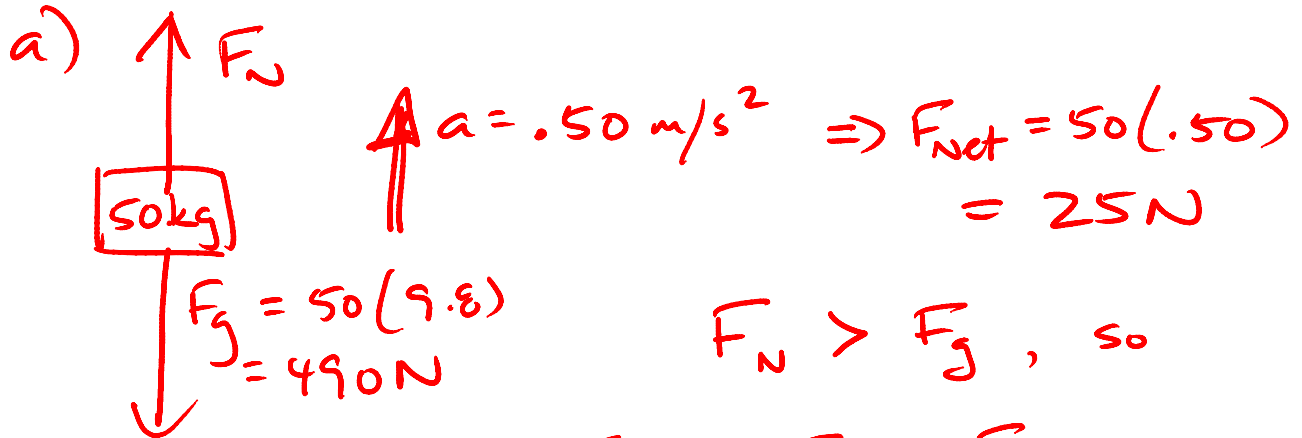


Example. #4. A 50.0 kg student is riding an elevator while standing on a bathroom type scale. Find the scale reading when the elevator is:

- a) accelerating upwards at 0.50 m/s^2 .
- b) traveling upwards, but decelerating at 1.0 m/s^2 .
- c) accelerating downwards at 0.75 m/s^2 .

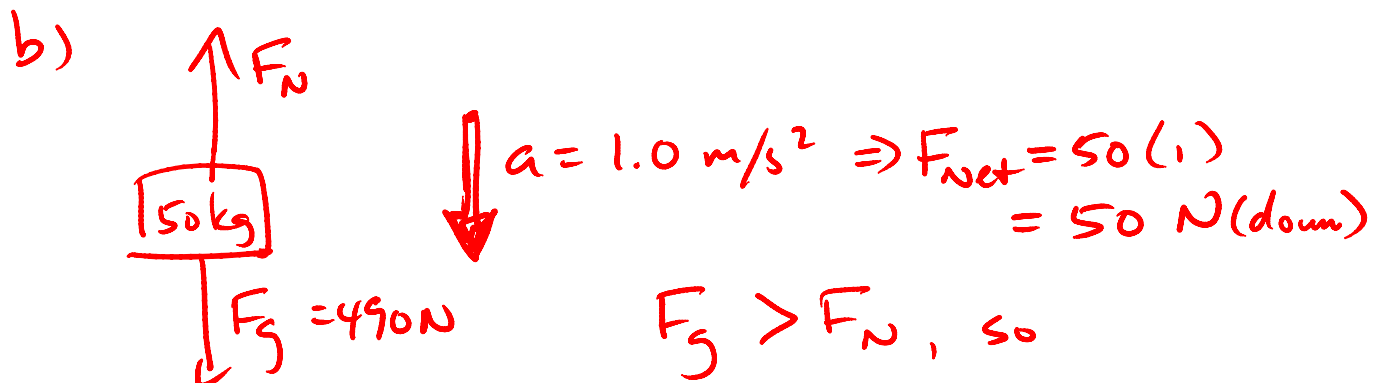
→ scale reading is F_N



$$F_{\text{net}} = F_N - F_g$$

$$25 = F_N - 490$$

$$\boxed{F_N = 5.1 \times 10^2 \text{ N}}$$

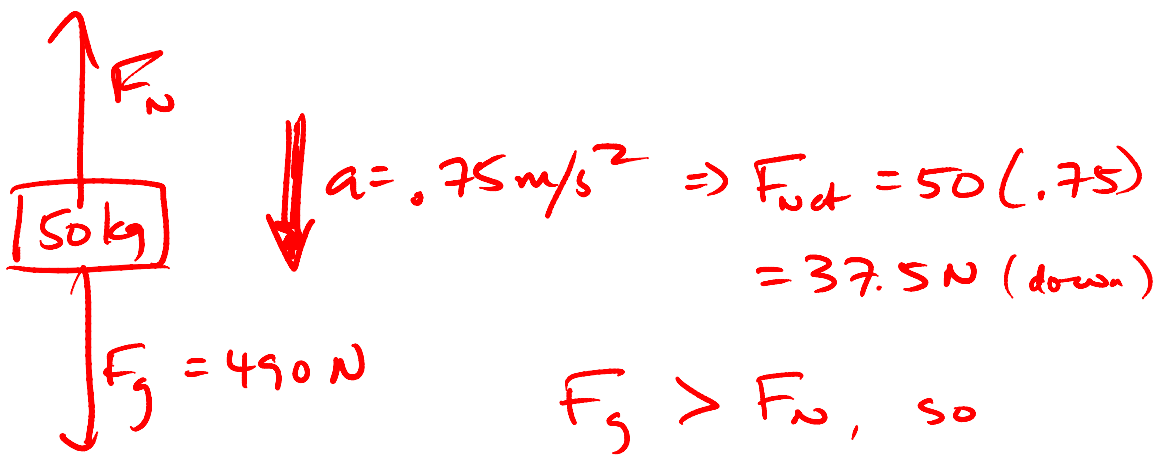


$$F_{\text{net}} = F_g - F_N$$

$$50 = 490 - F_N$$

$$\boxed{F_N = 4.4 \times 10^2 \text{ N}}$$

c)



$a = .75 \text{ m/s}^2 \Rightarrow F_{\text{net}} = 50(.75)$
 $= 37.5 \text{ N (down)}$

$F_g = 490 \text{ N}$

$F_g > F_N$, so

$$F_{\text{net}} = F_g - F_N$$

$$37.5 = 490 - F_N$$

$$F_N = 4.5 \times 10^2 \text{ N}$$